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09/498,271	02/04/2000	J. David Schaffer	US000018	8578

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EXAMINER	
SHELTON, BRIAN K	

ART UNIT	PAPER NUMBER
2611	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/498,271	Applicant(s) SCHAFFER, J. DAVID	
	Examiner Brian Shelton	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 June 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *51 and 52* is/are allowed.

6)☒ Claim(s) *1-6, 8-12, 17-19, 21-22, 26-30, 32-35, 40-42, 44-45, and 49-50* is/are rejected.

7)☒ Claim(s) *7 and 31; 13-16 and 36-39; 20 and 43; 23 and 46; 24-25 and 47-48* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 January 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2, 5.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the application received 04 February 2000 and the Pre-Amendment filed on 19 June 2000.

2. The application has been examined. **Original claims 1-52** are pending. The rejections and objections cited are as stated below:

Claim Objections

3. **Claim 50** is objected to because of the following informalities:

Claim 50, at line 2-3, "types of data within set" should be ---types of data with the set---. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1-4, 9-10, 21, 26-28, 33, and 44** are rejected under 35 U.S.C. 102(b) as being anticipated by Herz et al. (Herz), U.S. Patent No. 5,758,257.

Regarding **claims 1 and 26**, Herz discloses *a data processing device* (Fig. **10**; set top multimedia terminal **620**) *and a corresponding medium readable by a*

data processing device embodying software (Fig. **9**, disclosing software diagram), comprising:

(a) *At least one input* (Infrared receiver **1010** [customer input; see col. 46, lines 44-47] and Tuner **1002** [content profiles from headed **502**; see col. 46, lines 25-30]) *for receiving data including*:

(i) *viewer profile data* (col. 46, lines 47-50 [customer profile data/customer viewing habits stored in memory **1012**); and

(ii) *data regarding a television program* (Video programming content profiles received at data receiver **1004**; col. 46, lines 27-28); *and*

(b) *a processor* (microprocessor **1006**), *the processor being adapted to perform the following:*

(i) *Calculating a probability that the television program is a desired one* (col. 46, lines 43-45, disclosing calculation of agreement matrix by hardware embodiment; see col. 19, line 5 – col. 20, line 48 [disclosing method of agreement matrix calculation];); *and*

(ii) *supplying a recommendation based on the probability* (col. 46, lines 50-61).

As for **claim 2**, Herz discloses *the input is coupled with a medium readable by the data processing device* (Fig. **10**; memory **1012** connected to inputs Tuner **1002** and Infrared Receiver **1010** via Microprocessor **1006**).

As for **claims 3 and 27**, Herz discloses *the medium embodies the viewer profile* (col. 46, lines 47-50).

As for **claims 4 and 28**, Herz discloses *the medium is local to the data processing device* (Fig. **10**, Set top multimedia terminal **620** comprising internal memory **1012**); *and the viewer profile is arranged so as to be incrementally updateable* (Fig. **1**, profile update step **112**; see col. 25, lines 33-48; see also Fig. **3** and col. 26, line 51 – col. 27, line 6, detailing profile update procedure).

As for **claims 9 and 33**, Herz discloses *the medium* (memory **1012**) *embodies data regarding the television program* (col. 46, lines 47-50 [Customer profile/viewing record data]; see col. 25, lines 45-48 [customer profile data reflects programming watched by viewer]).

As for **claim 10**, Herz discloses *the input is a network connection* (Tuner **1002** input connected to headend **502** via a cable television network; col. 46, lines 24-27).

As for **claims 21 and 44**, Herz discloses *it is assumed that programs watched are programs that the viewer is interested in* (Fig. **3**, step **306**; see col. 26, lines 57-62 [customer profile presumed accurate following watching predicted program]).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. **Claims 5, 8, 17, 18, 19, 29, 32, 40, 41 and 42** are rejected under 35 U.S.C. 103(a) as being unpatentable over Herz et al. (Herz), U.S. Patent No. 5,758,257 in view Lawler, U.S. Patent No. 5,758,259.

Regarding **claims 5 and 29**, Herz is relied upon for the disclosure as discussed above relative to claims 1 and 26. Although Herz discloses the processor maintaining a viewer profile, Herz fails to disclose the viewer profile in accordance with a data structure comprising a list of feature values; and for each element in the list, a respective number of times programs having that feature value were not watched.

But Lawler, in an analogous art, teaches the data structure of a viewer profile comprising a list of feature values (criteria "Name," "Genre," "Subgenre," and "Team"; see col. 7, line 64 – col. 8, line 3) and for each element of the list, a respective number of times programs having that feature value were watched (count of received programs matching the value; col. 7, line 64 – col. 8, line 44

[viewer profile database]), for the advantage of incorporating characteristic features of previously viewed programming to enhance the accuracy of a future programming recommendation (see col. 2, lines 20 –29).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the viewer profile maintained by the processor of Herz to incorporate a data structure comprising a list of feature values and for each element of the list, a respective number of time programs having that feature value were watched, as taught by Lawler, for the advantage of incorporating characteristic features of previously viewed programming to enhance the accuracy of a future programming recommendation in a television program suggestion system.

The limitation of **claims 8 and 32** is encompassed by the teachings of Herz in view of Lawler. Specifically, Lawler teaches the processor is further arranged to perform the following, each time a new user watches a program: first adding, to the list, feature values or counts of such feature values, associated with that program (col. 7, line 62 – col. 3, line 3).

Regarding **claims 17 and 40**, Herz is relied upon for the teachings as discussed above relative to claims 1 and 26. Although Herz discloses user profile data, Herz fails to disclose the viewer profile data comprises a plurality of

respective counts of programs watched, each respective count indicating how many programs watched had a respective feature.

However, Lawler, in an analogous art, discloses calculating a program recommendation based on user profile data comprising a plurality of respective counts of programs watched, wherein the respective counts indicate how many programs watched had a respective feature (col. 7, line 63 – col. 8, line 44 [viewer profile database]) for the advantage of incorporating characteristic features of previously viewed programming to enhance the accuracy of a future programming recommendation.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the user profile data of Herz to incorporate user profile data comprising calculating a probability that the television program is in a particular class, as taught by Lawler, for the advantage of incorporating characteristic features of previously viewed programming to enhance the accuracy of a future programming recommendation in a television program suggestion system.

The limitation of **claims 18 and 41** is encompassed by the teachings of Herz in view of Lawler, as discussed above relative to claims 17 and 40. Specifically, Lawler discloses calculating comprising calculating a probability that the television program is in a particular class (Fig. **6**; block **144** [viewer history

correlation]; see col.. 8, line 56 – col. 9, line 11; block **146** [identification of preferred programming]; see col. 9, line 12-18).

The limitation of **claims 19 and 42** is encompassed by the teachings of Herz in view of Lawler, as discussed above relative to claims 18 and 41. Specifically, Lawler discloses the class is one of programs the viewer is interested in (col. 9, lines 12-18, describing identification of preferred programming).

8. **Claims 6 and 30** are rejected under 35 U.S.C. 103(a) as being unpatentable over Herz et al. (Herz), U.S. Patent No. 5,758,257 in view of Lawler, as applied to claims 5 and 29, further in view of Heckerman et al. (Heckerman), U.S. Patent No. 5,704,017.

Regarding **claims 6 and 30**, the combined teaching of Herz in view of Lawler is relied upon as discussed above relative to claims 5 and 29. However, Herz in view of Lawler fails to disclose the data structure comprising, for each element in the list, a respective number of times programs having that feature value were not watched.

But Heckerman, in an analogous art, teaches a television program recommendation system with a database comprising observations of shows that were watched as well as shows that were not watched (col. 18, lines 53-62) for

the advantage of enhancing the accuracy of a recommendation by incorporating data regarding a user's dislikes into a belief network prediction.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the data structure of Herz in view of Lawler to incorporate a data structure comprising, for each element in the list, a respective number of times programs have that feature value were not watched, as taught by Heckerman, for the advantage of enhancing the accuracy of a recommendation by incorporating data regarding a user's dislikes into a belief network prediction in a television program suggestion system.

9. **Claims 22 and 45** are rejected under 35 U.S.C. 103(a) as being unpatentable over Herz et al. (Herz), U.S. Patent No. 5,758,257 in view Barret et al. (Barret), U.S. Patent No. 6,005,597.

Regarding **claims 22 and 45**, Herz is relied upon as disussed above relative to claims 1 and 26, but Herz fails to disclose the processor is further adapted to provide a recommendation regarding an additional item, other than a television program, based on the viewer profile.

However Barret, in an analogous art, teaches utilizing a viewer profile to provide a recommendation regarding other types of programming, such as radio programming or music on CD's or DVD's (col. 14, lines 13-23) for the advantage

of utilizing the previously acquired television viewing profile data to recommend additional media selections.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the recommendation of Herz to incorporate providing a recommendation regarding an additional item, other than a television program, based on the viewer profile, as taught by Barrett, for the advantage of utilizing the previously acquired television viewing profile data to recommend additional media selections thereby creating a dynamic program suggestion system.

10. **Claims 11, 12, 34 and 35** are rejected under 35 U.S.C. 103(a) as being unpatentable over Herz et al. (Herz), U.S. Patent No. 5,758,257 in view of Heckerman et al. (Heckerman), U.S. Patent No. 5,704,017.

Regarding **claims 11 and 34**, Herz is relied upon for the teachings as discussed above relative to claims 1 and 26. Although, Herz discloses a probability model utilized to predict program recommendations, Herz fails to disclose calculating comprises utilizing a Bayesian classifier.

But Heckerman, in an analogous art, teaches a television program recommendation wherein a Bayesian classifier is utilized to calculate a desired programming prediction (col. 16, lines 41-51 [probability determined from Bayesian belief network]; see also col. 18, lines 53-63, disclosing application to

TV recommendation) for the advantage of enhancing the accuracy of the programming prediction from the observed data.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the probability model of Herz to incorporate calculating comprising using a Bayesian classifier, as taught by Heckerman, for the advantage of enhancing the accuracy of the programming prediction from the observed data in a program suggestion system.

The limitation of **claims 12 and 35** is encompassed by the teachings of Herz in view of Heckerman. Specifically, Heckerman teaches subjecting the viewer profile to a noise threshold calculation prior to using the Bayesian classifier (col. 20, lines 1-8, wherein data from undesired dates and times comprise noise, where Applicant considers noise to be features considered to be statistically insignificant; see page 14, lines 9-18 of Applicant's Specification).

11. **Claims 49-50** are rejected under 35 U.S.C. 103(a) as being unpatentable over Heckerman et al. (Heckerman), U.S. Patent No. 5,704,017.

Regarding **claim 49**, Heckerman discloses a computer method comprising performing the following operations in a data processing device (Fig.**12**; see col. 3, lines 39-53): Receiving a set of data (step **1204**; col. 16, lines 32-41 [request containing causal attributes and known preferences]); drawing a conclusion from

the data based on a Bayesian classifier calculation (step **1206**; col. 16, lines 41-51 [probability determined from Bayesian belief network]); and presenting the conclusion to the user (step **1208**; col. 16, lines 51-53; see also col. 18, lines 53-63, disclosing application to TV recommendation).

Although Heckerman fails to specifically disclose the step of filtering the data in accordance with a noise criterion in the method as described above, Heckerman does suggest the desirability of pre-filtering the data to be considered when rendering a prediction (i.e., the data considered by the Bayesian classifier) (col. 20, lines 1-8) according to a noise criterion (col. 20, lines 2-5, wherein data from undesired dates and times comprise noise, where Applicant considers noise to be features considered to be statistically insignificant; see page 14, lines 9-18 of Applicant's Specification).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the prediction method of Heckerman to incorporating filtering the data in accordance with a noise criterion and drawing the conclusion from the filtered data, for the advantage of preventing undesired data from being considered a prediction calculation.

The limitation of **claim 50** is encompassed by the teaching of Heckerman, as discussed above. Specifically, Heckerman teaches the noise criterion is based on a frequency of instances of particular types of data within a set, which type are believed to likely represent noise (col. 20, lines 1-8 [filtering

programming data by date and time]; where Applicant considers noise to be features considered to be statistically insignificant; see page 14, lines 9-18 of Applicant's Specification).

Information Disclosure Statement

12. The IDS submitted by Applicant incorrectly reflects that references WO9746006 and 2726718 (France) were not considered by the Examiner. Accordingly, these references are included in Form 892 (Notice of References Cited) to reflect that references WO9746006 and 2726718 (France) have been considered.

Allowable Subject Matter

13. Claims 7 and 31; 13-16 and 36-39; 20 and 43; 23 and 46; 24-25 and 47-48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. **Claims 51 and 52** are allowed because the prior art fails to disclose the combination of a data processing method comprising performing the following operations in a data processing device: first receiving data reflecting physical observations, including a list of feature values and observations about feature values, some of the feature values are independent and some are not; second receiving data about an item to be classified, the data about the item to be classified including feature values; maintaining a division of the data reflecting physical observations into at least

two set, including a first set including feature deemed not independent and a second set including those features deemed independent; performing a probabilistic calculation on the data reflecting physical observations and the data regarding an item to be classified including: applying a Bayesian classifier calculation with respect to feature values relating to the second set; and applying a modified Bayesian classifier calculation with respect to feature values relating to the first set and presenting a conclusion regarding the item to be classified to a user based on the probabilistic calculation.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bedard, U.S. Patent No. 5,801,747 discloses monitoring viewer data to determine preferred categories of programming and utilizing the viewer profile to arrange an programming guide listing (abstract; Figs. 2 and 4).

Wehmeyer et al. (Wehmeyer), U.S. Patent No. 5,867,226 discloses a television programming recommendation system which maintains a profile of viewed programming including a count of types of programming viewed as well as specific program titles wherein the respective profile values are incremented each time a program/type of programming is viewed (col. 2, line 32 – col. 3, line15).

16. The following are suggested formats for either a Certificate of Mailing or Certificate of Transmission under 37 CFR 1.8(a). The certification may be included with

all correspondence concerning this application or proceeding to establish a date of mailing or transmission under 37 CFR 1.8(a). Proper use of this procedure will result in such communication being considered as timely if the established date is within the required period for reply. The Certificate should be signed by the individual actually depositing or transmitting the correspondence or by an individual who, upon information and belief, expects the correspondence to be mailed or transmitted in the normal course of business by another no later than the date indicated.

Certificate of Mailing

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Please refer to 37 CFR 1.6(d) and 1.8(a)(2) for filing limitations concerning facsimile transmissions and mailing, respectively.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Shelton whose telephone number is (703) 305-8714. The examiner can normally be reached on Monday-Friday, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the primary examiner, Christopher Grant can be reached on (703) 305-4755. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Brian Shelton
Examiner
Art Unit 2611

BS

CHRIS GRANT
PRIMARY EXAMINER